

## Claims:

1. A coating formulation for a substrate having abstractable hydrogen radicals, the  
5 formulation including a hydrophilic polymeric component comprising at least two  
polymeric species of differing molecular weights, an unsaturated hydrophilic  
monomer capable of free-radical polymerisation in the presence of a radical and a  
UV activatable compound capable of abstracting hydrogen radicals from the surface  
10 to be coated and from a polymeric specie of the hydrophilic polymeric component so  
as to initiate and promote the cross-linkage of the monomer to the surface and of the  
monomer or a propagating monomer chain to a polymeric specie of the polymeric  
component, and a suitable solvent.
2. A coating formulation as claimed in claim 1 wherein the unsaturated hydrophilic  
monomer has at least two acrylate functional groups.
- 15 3. A coating formulation as claimed in claim 1 and 2 wherein the at least two polymeric  
species include different functional groups.
4. A coating formulation as claimed in claim 1 or claim 2 wherein the polymeric  
species comprise chemically different polymers.
5. A coating formulation as claimed in any one of the preceding claims wherein the  
20 polymeric species comprise straight chain or branched chain polymers.
6. A coating formulation as claimed in any one of the preceding claims wherein at least  
one polymeric species comprises a relatively lower molecular weight polymer and at  
least one polymeric species comprises a relatively higher molecular weight polymer.
7. A coating formulation as claimed in claim 6 wherein the relatively lower molecular  
25 weight polymer has molecular weight in the range of 40kDa to 100kDa and the  
relatively higher molecular weight polymer has a molecular weight in the range of  
100kDa to 1500kDa.

8. A coating formulation as claimed in claim 6 or 7 wherein the weight ratio of the lower molecular weight polymer to the higher molecular weight polymer is at least about 1-3: 1-2.
- 5 9. A coating formulation as claimed in any one of the preceding claims wherein the UV activatable compound is selected from any of a group that use a hydrogen abstraction mechanism to initiate polymerisation, including aryl ketones such as benzophenone, xanthone and dichlorobenzophenone.
10. A coating formulation as claimed in claim 9 wherein the UV activatable compound is benzophenone.
- 10 11. A coating formulation as claimed in any one of the preceding claims wherein the monomer for the coating formulation is acrylic acid, which has the functionality to react both with the substrate and with the polymeric specie on initiation of the hydrogen abstraction mechanism by the UV activatable compound.
- 15 12. A coating mixture for a biomedical device which has labile hydrogen radicals available for abstraction, the mixture comprising acrylic acid monomer, at least two hydrophilic polymeric species of differing molecular weight and a UV activatable compound capable of abstracting labile hydrogen radicals from the surface to be coated and from at least one of the polymeric species so that on activation of the UV activatable compound, the components bond to the surface of the biomedical device  
20 to coat it with a hydrophilic, interpenetrating matrix of polymers.
13. A coating formulation as claimed in claim 12 wherein the UV activatable compound comprises benzophenone.
14. A coating formulation as claimed in claim 12 or 13 wherein the polymeric species comprise polyvinylpyrrolidone.